IN THE CLAIMS:

1. (Original) A reduced sensitivity spin valve sensor apparatus, comprising:

a spin valve sensor; and

at least one magnetic effect inducing device, wherein the at least one magnetic effect inducing device induces a magnetic field to the spin valve sensor to thereby reduce a sensitivity of a free layer of the spin valve sensor to applied magnetic fields.

2. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device is at least one permanent magnet.

3. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device is a pair of permanent magnet stabilizing elements.

4. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device is magnetized in a longitudinal direction parallel to the free layer of the spin valve sensor.

5. (Original) The reduced sensitivity spin valve sensor apparatus of claim 3, wherein the permanent magnet stabilizing elements are cobalt-platinum/chromium magnets.

6. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device reduces the spin valve sensor's propensity to saturate.

7. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device is an antiferromagnet layer.

8. (Original) The reduced sensitivity spin valve sensor apparatus of claim 7, wherein the antiferromagnet layer aligns atomic moments in the free layer of the spin valve sensor.

9. (Original) The reduced sensitivity spin valve sensor apparatus of claim 8, wherein the aligned atomic moments generate a longitudinal exchange induced bias field in the free layer that reduces the sensitivity of the free layer to applied magnetic fields.

10. (Currently Amended) The reduced sensitivity spin valve sensor apparatus <u>of claim 1</u>, further comprising:

at least one insulating film; and

at least one magnetic shield, wherein the insulating film is one of alumina, silicon nitride and aluminum nitride.

11. (Original) A method of making a reduced sensitivity spin valve sensor apparatus, comprising:

providing a spin valve sensor; and

providing at least one magnetic effect inducing device, wherein the at least one magnetic effect inducing device induces a magnetic field to the spin valve sensor to thereby reduce a sensitivity of a free layer of the spin valve sensor to applied magnetic fields.

12. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, wherein the at least one magnetic effect inducing device is at least one permanent magnet.

13. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, wherein the at least one magnetic effect inducing device is a pair of permanent magnet stabilizing elements.

14 (Original). The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, wherein the at least one magnetic effect inducing device is magnetized in a longitudinal direction parallel to the free layer of the spin valve sensor.

15. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 13, wherein the permanent magnet stabilizing elements are cobalt-platinum/chromium magnets.

16. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, wherein the at least one magnetic effect inducing device reduces the spin valve sensor's propensity to saturate.

17. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, wherein the at least one magnetic effect inducing device is an antiferromagnet layer.

18. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 17, wherein the antiferromagnet layer aligns atomic moments in the free layer of the spin valve sensor.

19. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 18, wherein the aligned atomic moments generate a longitudinal exchange induced bias field in the free layer that reduces the sensitivity of the free layer to applied magnetic fields.

20. (Original) The method of making a reduced sensitivity spin valve sensor apparatus of claim 11, further comprising:

providing at least one insulating film; and

providing at least one magnetic shield, wherein the insulating film is one of alumina, silicon nitride and aluminum nitride.

21. (Original) The reduced sensitivity spin valve sensor apparatus of claim 1, wherein the at least one magnetic effect inducing device is a pair of antiferromagnetic layers.

22. (Original) The reduced sensitivity spin valve sensor apparatus of claim 21, wherein the pair of antiferromagnetic layers includes an antiferromagnetic layer that pins a ferromagnetic layer at zero degrees relative to a long axis of the free layer.

23. (Original) The reduced sensitivity spin valve sensor apparatus of claim 21, wherein the pair of antiferromagnetic layers includes an antiferromagnetic layer that pins a ferromagnetic layer at ninety degrees relative to a long axis of the free layer.

24. (Original) The reduced sensitivity spin valve sensor apparatus of claim 21, wherein the pair of antiferromagnet layers includes a first antiferromagnet layer pinned at zero degrees relative to a long axis of the free layer, and a second antiferromagnet layer pinned at ninety degrees relative to the long axis of the free layer.

25. (Original) The reduced sensitivity spin valve sensor apparatus of claim 24, wherein the first and second antiferromagnetic layers have different blocking temperatures.

26. (Original) The reduced sensitivity spin valve sensor apparatus of claim 21, further comprising a ferromagnetic layer spaced from the free layer by a nonmagnetic layer.

27. (Original) The reduced sensitivity spin valve sensor apparatus of claim 26, wherein a thickness of the nonmagnetic layer is used to control an amount of ferromagnetic exchange between the ferromagnetic layer and the free layer.

28. (Original) The reduced sensitivity spin valve sensor apparatus of claim 27, wherein the thickness of the nonmagnetic layer is approximately between 10 and 25 Angstroms.

29. (Original) The method of claim 11, wherein the at least one magnetic effect inducing device is a pair of antiferromagnetic layers.

30. (Original) The reduced sensitivity spin valve sensor apparatus of claim 29, wherein the pair of antiferromagnetic layers includes an antiferromagnetic layer that pins a ferromagnetic layer at zero degrees relative to a long axis of the free layer.

31. (Original) The reduced sensitivity spin valve sensor apparatus of claim 29, wherein the pair of antiferromagnetic layers includes an antiferromagnetic layer that pins a ferromagnetic layer at ninety degrees relative to a long axis of the free layer.

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32. (Original) The reduced sensitivity spin valve sensor apparatus of claim 29, wherein the pair of antiferromagnetic layers includes a first antiferromagnetic layer that pins a first ferromagnetic layer at zero degrees relative to a long axis of the free layer, and a second antiferromagnetic layer that pins a second ferromagnetic layer at ninety degrees relative to the long axis of the free layer.

33. (Original) The reduced sensitivity spin valve sensor apparatus of claim 32, wherein the first and second antiferromagnetic layers have different blocking temperatures.

34. (Original) The reduced sensitivity spin valve sensor apparatus of claim 11, further comprising a ferromagnetic layer spaced from the free layer by a nonmagnetic layer.

35 (Original). The reduced sensitivity spin valve sensor apparatus of claim 34, wherein a thickness of the nonmagnetic layer is used to control an amount of ferromagnetic exchange between the ferromagnetic layer and the free layer.

36. (Original) The reduced sensitivity spin valve sensor apparatus of claim 35, wherein the thickness of the nonmagnetic layer is approximately between 10 and 25 Angstroms.